



**2020 Capitalization Rate Study
Electric Utilities**

FINAL

Completed: April 28, 2020

MONTANA DEPARTMENT OF REVENUE

Yield Capitalization Rate Conclusion

Industry: Electric Utilities

2020 Assessment Year

Capital Structure ^[1]

Equity	60.00%
Debt	40.00%

Equity Cost of Capital

		Weighting
Capital Asset Pricing Model - Ex Post ^[2]	6.18%	25%
Capital Asset Pricing Model - Ex Ante ^[2]	5.11%	25%
3 Stage Dividend Discount Model - Dividends ^[3]	7.75%	25%
3 Stage Dividend Discount Model - Earnings ^[3]	7.50%	25%
Weighted Average	6.64%	100%
Selected Cost of Equity	6.65%	

Debt Cost of Capital

		Weighting
A - Mergent's - Avg. YTM of A Rated Corporate Bonds ^[4]	3.36%	0%
Baa - Mergent's - Avg. YTM of Baa Rated Corporate Bonds ^[4]	3.88%	100%
Ba - MTDOR - Avg. YTM of Ba Rated Corporate Bonds ^[5]	6.58%	0%
Weighted Average	3.88%	100%
Selected Cost of Debt	3.90%	

Weighted Average Cost of Capital (WACC)

Source of Capital	Capital Structure	Cost of Capital	Marginal Tax Rate	After-tax Cost of Capital	Weighted Cost
Equity	60.00%	6.65%		6.65%	3.99%
Debt	40.00%	3.90%	24.00%	2.96%	1.19%
WACC	100.00%				5.18%
WACC (Rounded)					5.20%

Notes

[1] From worksheet: Capital Structure

[2] From worksheet: Capital Asset Pricing Model Summary

[3] From worksheet: Yield Equity Summary

[4] January 2020, Mergent Bond Record

[5] Montana Department of Revenue High Yield Debt Study

MONTANA DEPARTMENT OF REVENUE

Direct Capitalization Rate Conclusion

Industry: Electric Utilities

2020 Assessment Year

Capital Structure ^[1]

Equity	60.00%
Debt	40.00%

Equity Capitalization Rate ^[2]

NOI After-tax	4.60%
GCF	10.25%

Debt Capitalization Rate ^[3]

Calculated Current Yield	4.30%
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NOI After-tax Direct Capitalization Rate - If Using Marginal Tax

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	After-tax Capitalization Rate	Weighted Capitalization Rate
Equity	60.00%	4.60%		4.60%	2.76%
Debt	40.00%	4.30%	24.00%	3.27%	1.31%
Total	100.00%				4.07%

Total (Rounded)	4.10%
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GCF Direct Capitalization Rate - If Using Marginal Tax

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	After-tax Capitalization Rate	Weighted Capitalization Rate
Equity	60.00%	10.25%		10.25%	6.15%
Debt	40.00%	4.30%	24.00%	3.27%	1.31%
WACC	100.00%				7.46%

Total (Rounded)	7.50%
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Notes:

[1] From worksheet: Capital Structure

[2] From worksheet: Direct Equity Summary

[3] From worksheet: Calculated Current Yield

MONTANA DEPARTMENT OF REVENUE	
Direct Capitalization Rate Conclusion - Using Regulatory Tax Structure (Pre-Tax Debt)	
Industry: Electric Utilities	
2020 Assessment Year	

Capital Structure ^[1]

Equity	60.00%
Debt	40.00%

Equity Capitalization Rate ^[2]

NOI After-tax	4.60%
GCF	10.25%

Debt Capitalization Rate ^[3]

Calculated Current Yield	4.30%
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NOI After-tax Direct Capitalization Rate - If Using Regulatory Tax Str.

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	After-tax Capitalization Rate	Weighted Capitalization Rate
Equity	60.00%	4.60%		4.60%	2.76%
Debt	40.00%	4.30%		4.30%	1.72%
Total	100.00%				4.48%
Total (Rounded)					4.50%

GCF Direct Capitalization Rate - If Using Regulatory Tax Str.

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	After-tax Capitalization Rate	Weighted Capitalization Rate
Equity	60.00%	10.25%		10.25%	6.15%
Debt	40.00%	4.30%		4.30%	1.72%
WACC	100.00%				7.87%
Total (Rounded)					7.90%

Notes:

[1] From worksheet: Capital Structure

[2] From worksheet: Direct Equity Summary

[3] From worksheet: Calculated Current Yield

MONTANA DEPARTMENT OF REVENUE

Selection of Guideline Companies

Industry: Electric Utilities

2020 Assessment Year

Screening Requirements:

The universe of companies is all companies listed in Value Line under the Electric Utility (West) industries.

Companies were then selected using the following screening criteria:

1. Primarily supplies electricity to residential and commercial customers.
2. Headquartered and primarily operated in the United States.
3. Regulated by a state commission.
4. Generation portfolio primarily composed of coal, natural gas, renewables, and/or hydroelectric.
5. Not engaged in material M&A activity.

Ticker Symbol	Residential & Commercial Sales	Primarily in the US	Regulated	Generating portfolio sufficiently compatible	Consider as Potential Guideline Company	Not Engaged in Material M&A Activity	Use as Guideline Company	Note
AVA	70%	Yes	Yes	Yes	Yes	Yes	Yes	
BKH	70%	Yes	Yes	Yes	Yes	Yes	Yes	
EE	N/A	Yes	Yes	No	No	Yes	No	
EIX	81%	Yes	Yes	No	No	Yes	No	
HE	64%	Yes	Yes	No	No	Yes	No	
IDA	60%	Yes	Yes	Yes	Yes	Yes	Yes	
NWE	85%	Yes	Yes	Yes	Yes	Yes	Yes	
PNM	75%	Yes	Yes	Yes	Yes	Yes	Yes	
PNW	90%	Yes	Yes	No	No	Yes	No	
POR	79%	Yes	Yes	Yes	Yes	Yes	Yes	
SRE	83%	Yes	Yes	No	No	Yes	No	
XEL	85%	Yes	Yes	Yes	Yes	Yes	Yes	

MONTANA DEPARTMENT OF REVENUE

Support for Capital Structure

Industry: Electric Utilities

2020 Assessment Year

(\$ and Shares Outstanding In Thousands, except per share amounts)

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Ticker	Company	Industry Group	Financial Strength	Shares Outstanding	End of Year Closing Stock Price	MV Common Stock	MV Preferred Stock	MV Long Term Debt	PV of Operating Leases	Total Common, Preferred, LT Debt, & Op Leases	% Common	% Preferred	% Debt & Op Leases
		Value Line	Value Line	10-K	Yahoo	ExF	10-K	10-K	10-K	G+H+I+J	G/K	H/K	(I+J)/K
							Note [1]	Note [2]					
AVA	Avista Corp.	UTILWEST	A	67,177	48.09	3,230,542	0	2,272,327	69,693	5,572,562	58%	0%	42%
BKH	Black Hills	UTILWEST	A	61,477	78.54	4,828,380	0	3,479,367	5,000	8,312,747	58%	0%	42%
IDA	IDACORP Inc.	UTILWEST	A	50,398	106.80	5,382,507	0	2,083,931	0	7,466,438	72%	0%	28%
NWE	NorthWestern Corp.	UTILWEST	B++	53,999	71.67	3,870,122	0	2,416,814	3,682	6,290,618	62%	0%	38%
PNM	PNM Resources	UTILWEST	B+	79,654	50.71	4,039,235	0	3,142,704	160,363	7,342,302	55%	0%	45%
POR	Portland General	UTILWEST	B++	89,387	55.79	4,986,908	0	3,039,000	51,000	8,076,908	62%	0%	38%
XEL	Xcel Energy Inc.	UTILWEST	A+	524,539	63.49	33,302,982	0	20,227,000	1,743,000	55,272,982	60%	0%	40%
All Companies						59,640,675	0	36,661,143	2,032,738	98,334,556	61%	0%	39%
Average											61%	0%	39%
Median											60%	0%	40%
Trimmed Average											60%	0%	40%
High											72%	0%	45%
Low											55%	0%	28%
Selected											60%		40%

Notes

[1] Market value of preferred stock assumed to equal book value

[2] Market value of debt is fair value of long term debt from 10-K notes

MCA 15-1-210, rationale for changes to guideline companies:

2020 - Removed companies from the Utility Central Industry Group (LNT, OGE)

2020 - Removed PNW for having insufficiently comparable generating portfolio

2020 - Added AVA as major acquisition activities ceased

Current Average	61%	0%	39%
1 Year Ago	59%	0%	41%
2 Years Ago	59%	0%	41%
3 Year Average	60%	0%	40%

MONTANA DEPARTMENT OF REVENUE

Capital Asset Pricing Model (CAPM)

Industry: Electric Utilities

2020 Assessment Year

$$k_e = R_f + \beta \times ERP$$

		<i>Ex Post</i>	<i>Ex Ante</i>
$k_e =$	Cost of Equity	6.18%	5.11%
$R_f =$	Risk Free Rate	2.25%	2.25%
$\beta =$	Beta	0.55	0.55
$ERP =$	Equity Risk Premium ($R_m - R_f$)	7.15%	5.20%
$R_m =$	Market Rate of Return	9.40%	7.45%

Risk Free Rate Measures (R_f):

The Value Line Investment Survey: Selection & Opinion^[1]

January 3, 2020 Page 1325

Selected Yields on Taxable U.S. Treasury Securities as of 12/24/19

10-year	1.90%
30-year	2.33%

Federal Reserve Statistical Release^[2] and U.S. Department of the Treasury, Daily Treasury Yield Curve Rates^[3]

U.S. government securities, Treasury constant maturities, Nominal, December 31, 2019

10-year	1.92%
20-year	2.25%
30-year	2.39%

Risk Free Rate Selected **2.25%**

Notes

[1] "Value Line Selection & Opinion", Value Line (January 3, 2020)

[2] <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H.15>

[3] <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/>

Ex Post - Equity Risk Premium Measures ($ERP = R_m - R_f$)

Duff & Phelps, 2020 Cost of Capital Navigator

		R_m ^[4]	R_m	R_f	ERP
ERP "Historical" - <i>Ex Post</i>	Arithmetic Avg.	9.40%	9.40%	2.25%	7.15%
ERP "Supply-side" - <i>Ex Post</i>	Arithmetic Avg.	8.42%	8.42%	2.25%	6.17%
Ex Post Equity Risk Premium Selected		9.40%		2.25%	7.15%

MONTANA DEPARTMENT OF REVENUE

Capital Asset Pricing Model (CAPM)

Industry: Electric Utilities

2020 Assessment Year

$$k_e = R_f + \beta \times ERP$$

Ex Ante - Equity Risk Premium Measures (ERP = Rm - Rf)

DOR 3 Stage Dividend Growth Model, S & P 500, See Exhibit

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
ERP - <i>Ex Ante</i>	7.35%	7.35%	2.25%	5.10%

Duff & Phelps, 2020 Cost of Capital Navigator

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
ERP "Conditional" - <i>Ex Ante</i>		8.00%	3.00%	5.00%

Damodaran Implied ERP (Jan 8, 2020)

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
Implied Premium (FCFE) - <i>Ex Ante</i>	7.45%	7.12%	1.92%	5.20%
Implied Premium (FCFE with sustainable payout) - <i>Ex Ante</i>	7.31%	6.98%	1.92%	5.06%

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
<u>Average</u>	7.37%	7.36%		5.09%
<u>Median</u>	7.35%	7.24%		5.08%
<u>High</u>	7.45%	8.00%		5.20%
<u>Low</u>	7.31%	6.98%		5.00%

Equity Risk Premium Selected

7.45%	2.25%	5.20%
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Notes

[4] R_m estimated using selected Risk Free Rate (R_f)

MONTANA DEPARTMENT OF REVENUE

Support for Beta Selection in CAPM

Industry: Electric Utilities

2020 Assessment Year

A	B	C	D	E
Ticker	Company	Industry Group	Financial Strength	Beta
		<i>Value Line</i>	<i>Value Line</i>	<i>Value Line</i>
AVA	Avista Corp.	UTILWEST	A	0.60
BKH	Black Hills	UTILWEST	A	0.65
IDA	IDACORP Inc.	UTILWEST	A	0.50
NWE	NorthWestern Corp.	UTILWEST	B++	0.55
PNM	PNM Resources	UTILWEST	B+	0.50
POR	Portland General	UTILWEST	B++	0.55
XEL	Xcel Energy Inc.	UTILWEST	A+	0.45
Average				0.54
Median				0.55
Trimmed Average				0.54
High				0.65
Low				0.45
Selected				0.55

MONTANA DEPARTMENT OF REVENUE

Inflation & Real Growth
Industry: Electric Utilities
2020 Assessment Year

A	B	C	D	Nominal Growth	
				E	F
Source Description	Inflation (CPI)	Real Growth (GDP)	Nominal Growth	Low	High
Livingston Survey ^[1]	2.19%	2.14%	4.33%		
Survey of Professional Forecasters ^[2]	2.23%	2.03%	4.26%		
Congressional Budget Office ^[3]	2.40%	2.20%	4.60%		
Average	2.27%	2.12%	4.40%		
Median	2.23%	2.14%	4.37%		
High	2.40%	2.20%	4.60%		
Low	2.19%	2.03%	4.22%		
Selected	2.20%	2.20%	4.40%	4.22%	4.60%

Inflationary Trend Factors						
Year	Dec. CPI-U Index	Percent Change From Previous	Dec. to Dec. Conversion Factor	Annual Avg. CPI-U Index	Percent Change From Previous	Annual Conversion Factor
	<i>Note [5]</i>	<i>Note [6]</i>	<i>Note [7]</i>	<i>Note [5]</i>	<i>Note [6]</i>	<i>Note [7]</i>
2007	210.036		1.2235	207.342		1.2330
2008	210.228	0.1%	1.2224	215.303	3.7%	1.1874
2009	215.949	2.6%	1.1900	214.537	-0.4%	1.1917
2010	219.179	1.5%	1.1724	218.056	1.6%	1.1724
2011	225.672	2.9%	1.1387	224.939	3.1%	1.1366
2012	229.601	1.7%	1.1192	229.594	2.0%	1.1135
2013	233.049	1.5%	1.1027	232.957	1.4%	1.0974
2014	234.812	0.8%	1.0944	236.736	1.6%	1.0799
2015	236.525	0.7%	1.0865	237.017	0.1%	1.0786
2016	241.432	2.0%	1.0644	240.007	1.2%	1.0652
2017	246.524	2.1%	1.0424	245.120	2.1%	1.0430
2018	251.233	1.9%	1.0229	251.107	2.4%	1.0181
2019	256.974	2.2%	1.0000	255.657	1.8%	1.0000

Notes

[1] Federal Reserve Bank of Philadelphia The Livingston Survey December 13, 2019 Table 3 Inflation Rate and Real GDP mean

<https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey>

[2] Federal Reserve Bank of Philadelphia Survey of Professional Forecasters February 14, 2020 Table 8 and Table 9 Average over next 10-Year mean

<https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2020/survq120>

[3] Congressional Budget Office, The Budget and Economic Outlook: 2020 to 2030, Table 2-1

<https://www.cbo.gov/about/products/budget-economic-data#4>

[5] Historical Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, all items, index averages (1982-84=100, unless otherwise noted)

<https://www.bls.gov/cpi/tables/supplemental-files/historical-cpi-u-202001.pdf>

[6] (Row year - Previous Year) / Row Year

[7] Most current year / Row year

MONTANA DEPARTMENT OF REVENUE

3 Stage Dividend Discount Model (DDM)

Industry: Electric Utilities

2020 Assessment Year

$$k_e = (D_1 / P_0) + g$$

k_e = Cost of Equity

D_1 = Expected Dividend

P_0 = Current Price Per Share

g = Sustainable Long-Term Growth

A	B	C	D	E	F	G	H	I
Ticker	Company	2019 Year End Stock Price	2020 Est Div'ds Decl'd per sh	Expected Equity Payout Yield	Sustainable Long-Term Growth Rate ^[1]	Sustainable Long-Term Growth Rate ^[1]	Cost of Equity Dividend Growth	Cost of Equity Earnings Growth
		<i>Yahoo</i>	<i>Value Line</i>	<i>D/C</i>	<i>Dividends</i>	<i>Earnings</i>	<i>E+F</i>	<i>E+G</i>
		P_0	D_1	D_1/P_0	g	g	k_e	k_e
AVA	Avista Corp.	48.09	1.61	3.35%	3.76%	5.54%	7.11%	8.89%
BKH	Black Hills	78.54	2.17	2.76%	5.13%	4.71%	7.89%	7.47%
IDA	IDACORP Inc.	106.80	2.73	2.56%	5.44%	4.44%	8.00%	6.99%
NWE	NorthWestern Corp.	71.67	2.40	3.35%	4.23%	3.58%	7.58%	6.93%
PNM	PNM Resources	50.71	1.24	2.45%	5.20%	4.13%	7.64%	6.58%
POR	Portland General	55.79	1.62	2.90%	5.22%	4.87%	8.13%	7.78%
XEL	Xcel Energy Inc.	63.49	1.72	2.71%	5.04%	4.91%	7.75%	7.62%
Average							7.73%	7.47%
Median							7.75%	7.47%
Trimmed Average							7.77%	7.36%
High							8.13%	8.89%
Low							7.11%	6.58%
Selected							7.75%	7.50%

Notes

[1] From worksheet: DDM Sustainable Long-Term Growth

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Short Term Growth Rate Calculations

Industry: Electric Utilities

2020 Assessment Year

A	B	C	D	E	F	G
		End of Year Closing Stock Price	Div'ds Decl'd per sh 2020 Est	Expected Dividend Yield	Div'ds Decl'd per sh 2022-2024 Est	Short-Term Growth Rate
Ticker	Company	Yahoo	Value Line	D / C	Value Line	Note [1]
AVA	Avista Corp.	48.09	1.61	3.35%	1.75	2.82%
BKH	Black Hills	78.54	2.17	2.76%	2.60	6.21%
IDA	IDACORP Inc.	106.80	2.73	2.56%	3.35	7.06%
NWE	NorthWestern Corp.	71.67	2.40	3.35%	2.70	4.00%
PNM	PNM Resources	50.71	1.24	2.45%	1.50	6.55%
POR	Portland General	55.79	1.62	2.90%	1.95	6.38%
XEL	Xcel Energy Inc.	63.49	1.72	2.71%	2.05	6.03%

A	B		C		D	E
			Earnings per share 2020 Est		Earnings per share 2022-2024 Est	Short-Term Growth Rate
Ticker	Company		Value Line		Value Line	Note [1]
AVA	Avista Corp.		2.05		2.50	6.84%
BKH	Black Hills		3.65		4.25	5.20%
IDA	IDACORP Inc.		4.60		5.25	4.50%
NWE	NorthWestern Corp.		3.50		3.75	2.33%
PNM	PNM Resources		2.25		2.50	3.57%
POR	Portland General		2.55		3.00	5.57%
XEL	Xcel Energy Inc.		2.75		3.25	5.73%

Notes

[1] 4 year compound annual growth rate (CAGR) - 3 periods

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Sustainable Long Term Growth

Industry: Electric Utilities

2020 Assessment Year

Dividend Growth Rate									Stage 1				
Ticker	Company	Year End Stock Price	Expected Short-Term Dividend Growth Rate	Expected Long-Term Growth Rate	Expected Dividend Yield	Internal Rate of Return	Implied Sustainable Long-Term Growth Rate (g)	Initial Investment	D ₁	D ₂	D ₃	D ₄	D ₅
		Yahoo	Note [1]	Note [2]	D_1/P_0	$K_e = IRR \text{ of } D_1:D_{500}$	$g = IRR - Div. \text{ Yield}$						
AVA	Avista Corp.	48.09	2.82%	4.40%	3.35%	7.11%	3.76%	(48.09)	1.61	1.66	1.70	1.75	1.80
BKH	Black Hills	78.54	6.21%	4.40%	2.76%	7.89%	5.13%	(78.54)	2.17	2.30	2.45	2.60	2.76
IDA	IDACORP Inc.	106.80	7.06%	4.40%	2.56%	8.00%	5.44%	(106.80)	2.73	2.92	3.13	3.35	3.59
NWE	NorthWestern Corp.	71.67	4.00%	4.40%	3.35%	7.58%	4.23%	(71.67)	2.40	2.50	2.60	2.70	2.81
PNM	PNM Resources	50.71	6.55%	4.40%	2.45%	7.64%	5.20%	(50.71)	1.24	1.32	1.41	1.50	1.60
POR	Portland General	55.79	6.38%	4.40%	2.90%	8.13%	5.22%	(55.79)	1.62	1.72	1.83	1.95	2.07
XEL	Xcel Energy Inc.	63.49	6.03%	4.40%	2.71%	7.75%	5.04%	(63.49)	1.72	1.82	1.93	2.05	2.17

Earnings Growth Rate									Stage 1				
Ticker	Company	Year End Stock Price	Expected Short-Term Earnings Growth Rate	Expected Long-Term Growth Rate	Expected Dividend Yield	Internal Rate of Return	Implied Sustainable Long-Term Growth Rate (g)	Initial Investment	D ₁	D ₂	D ₃	D ₄	D ₅
		Yahoo	Note [1]	Note [2]	D_1/P_0	$K_e = IRR \text{ of } D_1:D_{500}$	$g = IRR - Div. \text{ Yield}$						
AVA	Avista Corp.	48.09	6.84%	4.40%	3.35%	8.89%	5.54%	(48.09)	1.61	1.72	1.84	1.96	2.10
BKH	Black Hills	78.54	5.20%	4.40%	2.76%	7.47%	4.71%	(78.54)	2.17	2.28	2.40	2.53	2.66
IDA	IDACORP Inc.	106.80	4.50%	4.40%	2.56%	6.99%	4.44%	(106.80)	2.73	2.85	2.98	3.12	3.26
NWE	NorthWestern Corp.	71.67	2.33%	4.40%	3.35%	6.93%	3.58%	(71.67)	2.40	2.46	2.51	2.57	2.63
PNM	PNM Resources	50.71	3.57%	4.40%	2.45%	6.58%	4.13%	(50.71)	1.24	1.28	1.33	1.38	1.43
POR	Portland General	55.79	5.57%	4.40%	2.90%	7.78%	4.87%	(55.79)	1.62	1.71	1.81	1.91	2.01
XEL	Xcel Energy Inc.	63.49	5.73%	4.40%	2.71%	7.62%	4.91%	(63.49)	1.72	1.82	1.92	2.03	2.15

Notes

[1] From worksheet: DDM Short Term Growth Rate Calculations

[2] From worksheet: Inflation & Real Growth

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Sustainable Long Term Growth

Industry: Electric Utilities

2020 Assessment Year

Dividend	Stage 2															Stage 3		
Ticker	D ₆	D ₇	D ₈	D ₉	D ₁₀	D ₁₁	D ₁₂	D ₁₃	D ₁₄	D ₁₅	D ₁₆	D ₁₇	D ₁₈	D ₁₉	D ₂₀	D ₂₁	D ₂₂	D ₅₀₀
AVA	1.85	1.91	1.96	2.02	2.08	2.14	2.20	2.27	2.33	2.40	2.47	2.54	2.62	2.69	2.77	2.89	3.02	2,624,739,515
BKH	2.93	3.11	3.30	3.50	3.71	3.94	4.18	4.43	4.70	4.99	5.29	5.61	5.96	6.32	6.70	7.00	7.31	6,346,597,431
IDA	3.83	4.10	4.38	4.68	5.00	5.35	5.72	6.11	6.53	6.98	7.46	7.97	8.52	9.11	9.73	10.16	10.61	9,215,583,402
NWE	2.92	3.04	3.16	3.29	3.42	3.56	3.70	3.85	4.01	4.17	4.34	4.51	4.69	4.88	5.08	5.30	5.54	4,809,159,292
PNM	1.70	1.81	1.93	2.05	2.18	2.32	2.47	2.63	2.80	2.97	3.16	3.37	3.58	3.81	4.06	4.24	4.42	3,841,163,272
POR	2.20	2.34	2.49	2.64	2.81	2.98	3.17	3.37	3.58	3.80	4.04	4.29	4.56	4.84	5.15	5.37	5.61	4,871,281,838
XEL	2.30	2.44	2.58	2.74	2.90	3.07	3.25	3.44	3.65	3.86	4.09	4.33	4.59	4.86	5.15	5.37	5.61	4,873,813,719

Earnings	Stage 2															Stage 3		
Ticker	D ₆	D ₇	D ₈	D ₉	D ₁₀	D ₁₁	D ₁₂	D ₁₃	D ₁₄	D ₁₅	D ₁₆	D ₁₇	D ₁₈	D ₁₉	D ₂₀	D ₂₁	D ₂₂	D ₅₀₀
AVA	2.24	2.39	2.55	2.72	2.90	3.09	3.30	3.52	3.75	4.00	4.27	4.56	4.86	5.18	5.53	5.77	6.03	5,235,883,365
BKH	2.80	2.94	3.09	3.25	3.42	3.59	3.78	3.97	4.18	4.39	4.62	4.86	5.11	5.37	5.65	5.89	6.15	5,345,494,485
IDA	3.40	3.56	3.72	3.88	4.06	4.24	4.43	4.63	4.84	5.06	5.28	5.52	5.77	6.03	6.30	6.58	6.87	5,963,641,628
NWE	2.70	2.76	2.83	2.90	2.97	3.05	3.12	3.20	3.28	3.36	3.44	3.52	3.61	3.70	3.79	3.96	4.13	3,589,322,534
PNM	1.48	1.53	1.59	1.65	1.71	1.77	1.83	1.90	1.97	2.04	2.11	2.19	2.27	2.35	2.44	2.54	2.66	2,306,318,545
POR	2.12	2.24	2.36	2.49	2.63	2.77	2.92	3.09	3.25	3.43	3.62	3.82	4.03	4.25	4.48	4.68	4.89	4,245,865,869
XEL	2.27	2.40	2.53	2.68	2.83	2.99	3.16	3.33	3.52	3.72	3.93	4.15	4.38	4.63	4.89	5.11	5.33	4,632,383,388

MONTANA DEPARTMENT OF REVENUE

Support for Yield Capitalization Rate - Debt Rating

Industry: Electric Utilities

2020 Assessment Year

A	B	C	D	E	F
Ticker	Company	Industry Group	Financial Strength	Moody's Long Term Rating	Numeric Rating
		<i>Value Line</i>	<i>Value Line</i>	<i>Moodys.com</i>	
AVA	Avista Corp.	UTILWEST	A	Baa2	9
BKH	Black Hills	UTILWEST	A	Baa2	9
IDA	IDACORP Inc.	UTILWEST	A	Baa1	8
NWE	NorthWestern Corp.	UTILWEST	B++	Baa2	9
PNM	PNM Resources	UTILWEST	B+	Baa3	10
POR	Portland General	UTILWEST	B++	A3	7
XEL	Xcel Energy Inc.	UTILWEST	A+	Baa1	8
Average					9
Median					9
Trimmed Average					9
High					10
Low					7
Selected				Baa2	9

MONTANA DEPARTMENT OF REVENUE

Support for Direct Capitalization - Equity Capitalization Rates

Industry: Electric Utilities

2020 Assessment Year

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Ticker	Company	End of Year Closing Stock Price	VL Historic EPS	VL Est EPS	VL Historic P/E Ratio	VL Est P/E Ratio	Ke Estimate - Earnings (Hist. P/E)	Ke Estimate - Earnings (Est. P/E)	VL Historic Cash Flow Per Share	VL Est Cash Flow Per Share	VL Historic P/CF Ratio	VL Est P/CF Ratio	Ke Estimate Cash Flow (Hist. P/CF)	Ke Estimate Cash Flow (Est. P/CF)	Market Value of Equity	Book Value of Equity	MTBR
		Yahoo	Value Line	Value Line	C/D	C/E	1/F	1/G	Value Line	Value Line	C/J	C/K	1/L	1/M	Price x Shrs	10-K	P/Q
AVA	Avista Corp.	48.09	2.98	2.05	16.14	23.46	6.20%	4.26%	6.06	5.15	7.94	9.34	12.60%	10.71%	3,230,542	1,939,284	1.67
BKH	Black Hills	78.54	3.54	3.65	22.19	21.52	4.51%	4.65%	6.61	6.85	11.88	11.47	8.42%	8.72%	4,828,380	2,362,123	2.04
IDA	IDACORP Inc.	106.80	4.60	4.60	23.22	23.22	4.31%	4.31%	8.06	8.20	13.25	13.02	7.55%	7.68%	5,382,507	2,464,628	2.18
NWE	NorthWestern Corp.	71.67	3.53	3.50	20.30	20.48	4.93%	4.88%	6.96	7.10	10.30	10.09	9.71%	9.91%	3,870,122	2,039,094	1.90
PNM	PNM Resources	50.71	2.27	2.25	22.34	22.54	4.48%	4.44%	5.13	5.80	9.88	8.74	10.12%	11.44%	4,039,235	1,690,227	2.39
POR	Portland General	55.79	2.39	2.55	23.34	21.88	4.28%	4.57%	6.97	7.45	8.00	7.49	12.49%	13.35%	4,986,908	2,591,000	1.92
XEL	Xcel Energy Inc.	63.49	2.64	2.75	24.05	23.09	4.16%	4.33%	6.24	6.60	10.17	9.62	9.83%	10.40%	33,302,982	13,239,000	2.52
Average					21.65	22.31	4.69%	4.49%			10.20	9.97	10.10%	10.31%			2.09
Median					22.34	22.54	4.48%	4.44%			10.17	9.62	9.83%	10.40%			2.04
Trimmed Average					22.28	22.45	4.50%	4.46%			10.05	9.85	10.11%	10.23%			2.09
High					24.05	23.46	6.20%	4.88%			13.25	13.02	12.60%	13.35%			2.52
Low					16.14	20.48	4.16%	4.26%			7.94	7.49	7.55%	7.68%			1.67
Selected							4.60%						10.25%				2.09

MONTANA DEPARTMENT OF REVENUE

Support for Direct Capitalization - Debt Capitalization Rate

Industry: Electric Utilities

2020 Assessment Year

(\$ in Thousands)

A	B	C	D	E	F	G	H	I	J
Ticker	Company	YE 2019 Interest Exp.	YE 2018 MV LT Debt	YE 2018 BV LT Debt	YE 2019 MV LT Debt	YE 2019 BV LT Debt	2019 Avg MV LT Debt	2019 Current Yield	MTBR
		<i>10-K</i>	<i>10-K</i>	<i>10-K</i>	<i>10-K</i>	<i>10-K</i>	<i>(D+F)/2</i>	<i>(C/H)</i>	<i>(F/G)</i>
AVA	Avista Corp.	103,012	1,970,779	1,914,721	2,272,327	1,947,315	2,121,553	4.86%	1.17
BKH	Black Hills	145,847	3,039,108	2,956,578	3,479,367	3,145,839	3,259,238	4.47%	1.11
IDA	IDACORP Inc.	82,457	1,942,773	1,834,788	2,083,931	1,836,659	2,013,352	4.10%	1.13
NWE	NorthWestern Corp.	95,068	2,117,912	2,124,558	2,416,814	2,253,196	2,267,363	4.19%	1.07
PNM	PNM Resources	121,016	2,703,810	2,670,111	3,142,704	3,007,717	2,923,257	4.14%	1.04
POR	Portland General	128,000	2,760,000	2,478,000	3,039,000	2,597,000	2,899,500	4.41%	1.17
XEL	Xcel Energy Inc.	773,000	16,755,000	16,209,000	20,227,000	18,109,000	18,491,000	4.18%	1.12
All Companies		1,448,400			36,661,143	32,896,726	33,975,263	4.26%	1.11
Average								4.34%	1.12
Median								4.19%	1.12
Trimmed Average								4.28%	1.12
High								4.86%	1.17
Low								4.10%	1.04
Selected								4.30%	1.12

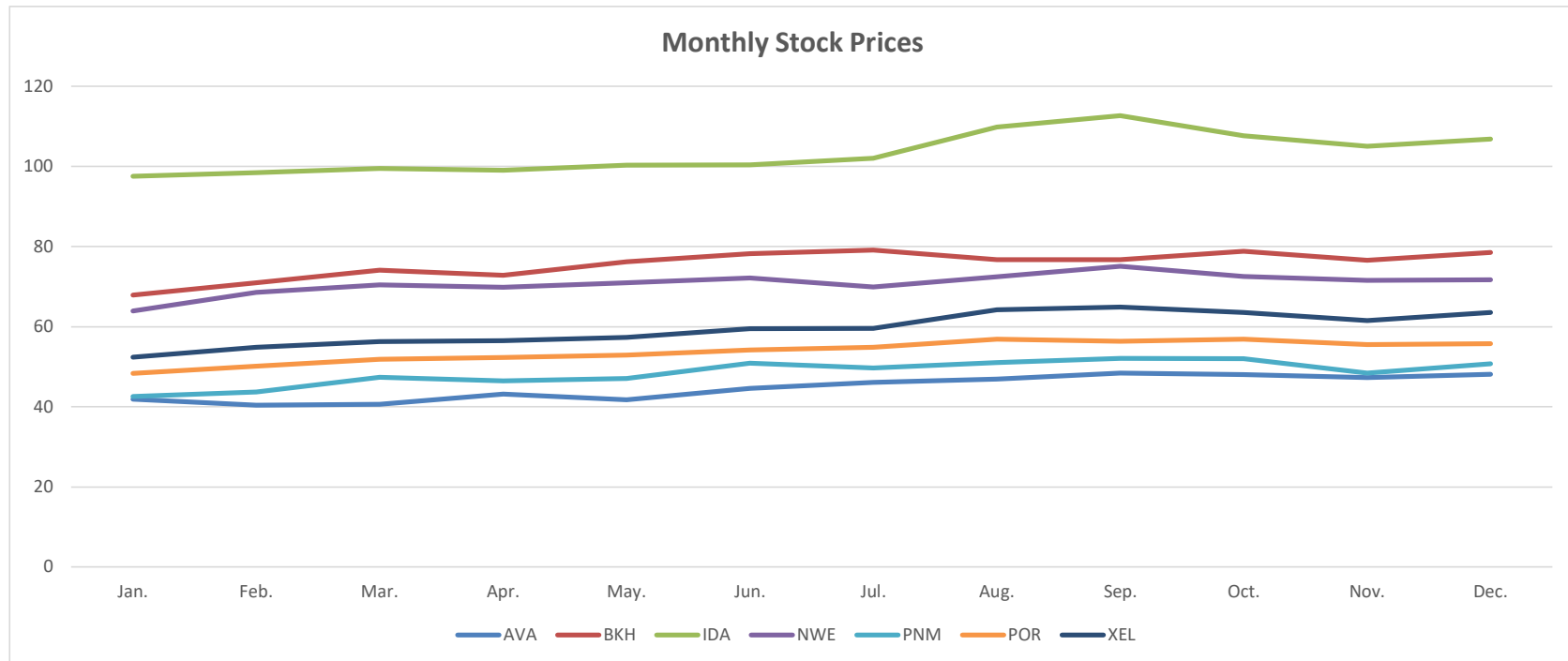
MONTANA DEPARTMENT OF REVENUE

Support of Stock Price - From YAHOO Finance

Industry: Electric Utilities

2020 Assessment Year

		End of Period Closing Stock Price											
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	B	C	D	E	F	G	H	I	J	K	L	M	N
Ticker	Company	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
AVA	Avista Corp.	41.85	40.41	40.62	43.14	41.76	44.6	46.03	46.9	48.44	48.03	47.28	48.09
BKH	Black Hills	67.89	70.98	74.07	72.76	76.2	78.17	79.15	76.71	76.73	78.83	76.57	78.54
IDA	IDACORP Inc.	97.5	98.41	99.54	99.02	100.27	100.43	102.06	109.81	112.67	107.62	105.05	106.8
NWE	NorthWestern Corp.	63.91	68.54	70.41	69.85	70.94	72.15	69.92	72.44	75.05	72.52	71.57	71.67
PNM	PNM Resources	42.59	43.68	47.34	46.44	47.11	50.91	49.67	51.01	52.08	52.01	48.45	50.71
POR	Portland General	48.32	50.14	51.84	52.31	52.86	54.17	54.85	56.89	56.37	56.88	55.51	55.79
XEL	Xcel Energy Inc.	52.36	54.86	56.21	56.5	57.34	59.49	59.61	64.22	64.89	63.51	61.49	63.49



MONTANA DEPARTMENT OF REVENUE

Maintenance Capital Expenditures Estimate Based on Guideline Companies

Industry: Electric Utilities

2020 Assessment Year

(\$ In Thousands)

1	2	3	4	5	6	7	8	9	10	11	
A	B	C	D	E	F	G	H	I	J	K	L
Ticker	Company	Inflation	PP&E, Gross	PP&E, Gross	Average PP&E	Depreciation Expense	Average Life of Assets			Replacement Cost (RC)	RC as % of Depreciation
			Current Year	Previous Year				Note [1]	Note [1]	Note [1]	
		MTDOR (CPI)	10-K, Notes	10-K, Notes	(D+E)/2	10-K (CF)	F/G	C*H	1/(1+C)^H	G*I/(1-J)	K/G
AVA	Avista Corp.	2.20%	6,627,934	6,370,566	6,499,250	205,994	32	0.69	0.50	287,861	139.74%
BKH	Black Hills	2.20%	6,784,679	6,000,015	6,392,347	209,120	31	0.67	0.51	289,467	138.42%
IDA	IDACORP Inc.	2.20%	6,113,567	6,103,856	6,108,712	173,800	35	0.77	0.47	251,384	144.64%
NWE	NorthWestern Corp.	2.20%	6,553,928	6,286,104	6,420,016	172,923	37	0.82	0.45	254,846	147.38%
PNM	PNM Resources	2.20%	7,918,601	7,548,581	7,733,591	301,068	26	0.57	0.57	397,322	131.97%
POR	Portland General	2.20%	10,928,000	10,344,000	10,636,000	409,000	26	0.57	0.57	541,455	132.39%
XEL	Xcel Energy Inc.	2.20%	55,844,000	52,249,000	54,046,500	1,785,000	30	0.67	0.52	2,463,895	138.03%
Average											138.94%
Median											138.42%
Trimmed Average											138.64%
High											147.38%
Low											131.97%
Selected											139.00%

Notes

[1] Cornell, B. & Gerger, R. (2017). Estimating Terminal Values with Inflation: The Inputs Matter-It Is Not a Formulaic Exercise. *Business Valuation Review*, Volume 36, Number 4, 117-123.